In the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the

Application.

Listing of Claims:

1.   (Original) A system for managing a plurality of storage area networks including a

plurality of data storage volumes and one or more hosts, the system comprising:

an intelligent multi-protocol switch (IMPS) combined with a storage and switch

controller including at least one microprocessor and a disk array for storing meta-data related to

the plurality of data storage volumes such that the one or more data storage networks are

managed by the controller using the meta-data and by controlling the IMPS.

2.   (Original) The system of claim 1, wherein execution of software running on the IMPS

and the storage and switch controller forms an instance of storage area network management that

is separate from a host or the plurality of data storage volumes.

3.   (Original) The system of claim 2, wherein the controller includes software components

for interfacing with an application program interface for the IMPS.

4.   (Original) The system of claim 1, wherein the plurality of storage area networks are

represented by a plurality of virtual storage area networks.

5.   (Original) The system of claim 4, wherein the plurality of virtual storage area networks includes a plurality of virtual storage volumes.

6.   (Original) The system of claim 1, wherein a switch abstraction layer software on the controller is provided for managing the IMPS.

7.   (Original) The system of claim 6, wherein a software agent is provided on the IMPS for interfacing with the switch abstraction layer through an application program interface.

8.   (Original) The system of claim 7, wherein the plurality of storage area networks are represented by a plurality of virtual storage area networks.

9.   (Original) The system of claim 8, wherein the plurality of virtual storage area networks includes a plurality of virtual storage volumes.

10.   (Original) The system of claim 2, wherein a switch abstraction layer software on the controller is provided for managing the IMPS.

11.   (Original) The system of claim 10, wherein a software agent is provided on the IMPS for   interfacing with the switch abstraction layer through an application program   interface.

12.   (Original) The system of claim 11, wherein the plurality of storage area networks are represented by a plurality of virtual storage area networks.

13.   (Original) The system of claim 12, wherein the plurality of virtual storage area networks includes a plurality of virtual storage volumes.

14.   (Original) A method for managing a plurality of storage area networks including a plurality of data storage volumes and one or more hosts, the method comprising the steps of:

executing a software agent on an intelligent multi-protocol switch (IMPS);

executing IMPS controlling software that cooperates with the software agent on a storage and switch controller, wherein the storage and switch controller includes at least one microprocessor and a disk array for storing meta-data related to the plurality of data storage volumes; and

the controller managing the one or more data storage networks by using the meta-data and by controlling the IMPS through execution of the agent and the IMPS controlling software.

15.   (Original) The method of claim 14, wherein execution of software including the agent and the IMPS controlling software forms an instance of storage area network management that is separate from a host or the plurality of data storage volumes.

16.   (Original) The method of claim 15, wherein the controller includes software components for interfacing with an application program interface for the IMPS.

17. (Original)The method of claim 14, wherein the plurality of storage area networks are represented by a plurality of virtual storage area networks.

18. (Original) The method of claim 17, wherein the plurality of virtual storage area networks includes a plurality of virtual storage volumes.

19. (Original) The method of claim 14, wherein a switch abstraction layer software on the controller is provided for managing the IMPS.

20. (Original) The method of claim 19, wherein a software agent is provided on the IMPS for interfacing with the switch abstraction layer through an application program interface.

21. (Original) The method of claim 20, wherein the plurality of storage area networks are represented by a plurality of virtual storage area networks.

22. (Original) The method of claim 21, wherein the plurality of virtual storage area networks includes a plurality of virtual storage volumes.

23. (Original) The method of claim 15, wherein a switch abstraction layer software on the controller is provided for managing the IMPS.

24.   (Original) The method of claim 23, wherein a software agent is provided on the IMPS
for   interfacing with the switch abstraction layer through an application program   interface.

25.   (Original) The method of claim 24, wherein the plurality of storage area networks are
represented by a plurality of virtual storage area networks.

26.   (Original) The method of claim 25, wherein the plurality of virtual storage area networks
includes a plurality of virtual storage volumes.

27.   (Currently Amended) A program product for managing a plurality of storage area
networks including a plurality of data storage volumes and one or more hosts, the program
product operating in an environment that includes an intelligent multi-protocol switch (IMPS)
combined with a storage and switch controller including at least one microprocessor and a disk
array for storing meta-data related to the plurality of data storage volumes such that the one or
more data storage networks are managed by the controller using the meta-data and by controlling
the IMPS, wherein the program product includes computer-executable logic encoded on a
<u>tangible</u> computer-readable medium for executing the following steps:

        executing as a software agent on an intelligent multi-protocol switch (IMPS);

        executing as IMPS controlling software that cooperates with the software agent on a
storage and switch controller, wherein the storage and switch controller includes at least one
microprocessor and a disk array for storing meta-data related to the plurality of data storage
volumes; and

managing the one or more data storage networks by using the meta-data and by controlling the IMPS through execution of the agent and the IMPS controlling software.

29. (Currently Amended) An apparatus for managing a plurality of storage area networks including a plurality of data storage volumes and one or more hosts, the program product operating in an tangible environment that includes an intelligent multi-protocol switch (IMPS) combined with a storage and switch controller including at least one microprocessor and a disk array for storing meta-data related to the plurality of data storage volumes such that the one or more data storage networks are managed by the controller using the meta-data and by controlling the IMPS, wherein the apparatus includes:

first means on the IMPS for executing as an agent;

second means on the storage and switch controller that cooperates with the means for executing as an agent on the IMPS and which manages the one or more data storage networks by using the meta-data and by controlling the IMPS through operation of the first and second means.